WISCONSIN ENDANGERED RESOURCES REPORT 14

STATUS AND MANAGEMENT OF BALD EAGLE IN 1984

by Charles Sindelar, Randle Jurewicz, and Charlene Gieck

SUMMARY

The Wisconsin Department of natural Resource continued its bald eagle (Haliaeetus leucocephalus) management program. It is designed to monitor population trends and increase productivity by describing, protecting, supplementing and enhancing nest sites. Territory management plans that identify both immediate and long-range management needs are being developed for all territories in the state. A statewide nest activity survey in March and May located 239 active nest sites. Reproduction continued to be excellent. A 21% increase in occupied territories and a 13% increase in successful territories resulted in a 11% increase in total production of young, over 1983. Leg bands were placed on 254 nestlings. Four eaglets were furnished to reintroduction projects in other states.

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Wisconsin Department of Natural Resources
Bureau of Endangered Resources
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PERFORMANCE REPORT

State: Wisconsin

Project Title: Wisconsin Endangered and Threatened Species Investigation

Cooperators: States of Michigan, Illinois

Project No.: E-1-7

Study Title: Status and Management of Bald Eagle

Study No.: 211

Period Covered: October 1, 1983 to September 30, 1984

Contents

Abstract

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Job 211.1 Conduct Survey

Objective

Monitor known bald eagle territories through annual aerial surveys to determine population trends and nesting success.

Procedures

See the Methods section of the attached report by Charles Sindelar, "Wisconsin Bald Eagle Breeding Survey - 1984".

Findings

North Central District

New pairs of eagles occurred in Lincoln, Portage, Oneida and Vilas counties. The nest success in this district was 74%, 9% less than 1983, helping drop the statewide average to 71%.

	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Active territory	43	58	59	75	77	74	72	82	83	85	86	86
Successful territory			40	44	59	53	49	62	61	61	71	65
% success			67%	58.6%	73%	72%	68%	77%	73%	72%	83%	74%
Total young	53		70	69	98	93	76	115	101	106	114	106.6
Young/active territory	1.2		1.2	.92	1.3	1.3	1.05	1.4	1.2	1.2	1.3	1.2
Young/successful territory			1.2	1.6	1.7	1.7	1.55	1.85	1.7	1.7	1.6	1.6

Northwest District Eagle Statistics

New pairs were found in Barron, Burnett, Rusk, Taylor and Sawyer counties. Those nesting on Wisconsin's mainland shore of Lake Superior were very successful this year.

	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Active territory	40	25	47	64	67	58	70	84	93	106	95	120
Successful territory			25	42	46	39	52	62	68	73	53	90
% success			53%	65.6%	67%	67%	74%	73%	73%	69%	56%	75%
Total young	34		35	45	78	67	94	103	113	125	118	147.2
Young/active territory	.85		.74	.70	1.2	1.1	1.34	1.2	1.2	1.2	1.2	1.2
Young/successful territory			1.4	1.07	1.6	1.7	1.8	1.7	1.7	1.7	2.2	1.6

Lake Michigan District

New pairs were found in Door and Menominee counties.

	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Active territory	6	6	5	6	6	6	5	6	7	10	10	10
Successful territory			4	1	2	4	4	5	6	7	6	7
% success			80%	2%	33%	67%	80%	83%	88%	70%	60%	70%
Total young	0		7	2	4	6	8	9	10	14	12	13
Young/active territory			1.4	.3	.67	1.0	1.6	1.5	1.4	1.4	1.2	1.3
Young/successful territory			1.75	2.0	2.0	1.5	2.0	1.8	1.7	2.0	2.0	1.85

West Central District

	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Active territory						1	2	2	4	5	5	7
Successful territory						0	1	1	1	3	2	6
% success							50%	50%	25%	60%	40%	86%
Total young						0	1	2	1	3	3	10
Young/active territory							.5	1.0	.25	.6	.6	1.4
Young/successful territory							1.0	2.0	1.0	1.0	1.5	1.7

Southern District

The Southern District's only nest continued to be active in 1984.

	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Active territory				1	1	1	1	1	1	1	1	1
Successful territory				1	1	1	1	1	1	1	1	1
% success				100%	100%	100%	0	100%	100%	100%	100%	100%
Total young				2	1	2	0	2	2	3	2	2
Young/active territory				2	1	2	-	2	2	3	2	2
Young/successful territory				2	1	2	-	2	2	3	2	2

Statewide

See the summary section of the attached report by Charles Sindelar, "Wisconsin Bald Eagle Breeding Survey - 1984".

Job 211.2 Search for Active Nests

Objective

Search for new and previously undiscovered nests in areas of the northern lakes breeding range that may contain active territories.

Procedures and Findings

Sindelar and John Winship conducted two aerial nest checks, one in March/April and one in May. Howard Sheldon checked the Chequamegon National Forest in April.

Complications and weather forced the first check to finish later than optimum time. Some territories which were judged as "inactive" or "S.D." (Some Degree of Activity) may in fact have been occupied and then failed prior to this check.

Seventeen new territories were numbered and 37 new nests were located within old territories.

Sindelar also searched the Apostle Islands, discovering no new nests, but existing sites were very successful in 1984 (3 out of 4 produced 2 young each).

Job 211.3 Development and Implementation of Management Plans

Objective

Develop and implement management plans for all active territories.

Procedures and Findings

Concise information sheets were developed by Area Wildlife managers for territories using a standardized format (Appendix I). These information sheets facilitate identification of future Management needs on an individual territory basis. Ground checks of each territory were required and the following information recorded:

1. Nest tree and habitat characteristics.
2. A green-line map, or a copy of an aerial photo showing the exact location of the nest and all alternate nests.
3. Identification of all roads, trails and dwellings.
4. Recommendations to reduce disturbance factor such as closing or rerouting of trails, limiting timber harvest or limiting recreational development on public lands.
5. Reproductive histories.

Information sheets and management recommendations were compiled for 17 new territories and reviewed and updated with 1984 data for all known territories.

Job 211.4 Erection of Artificial Nesting Platforms

Objective

Increase bald eagle productivity by constructing artificial nesting platforms to replace defective nest trees, blown-down nests and other deteriorated nesting habitat.

Procedures

Bald eagle productivity can be increased by improving existing nests, providing nesting structures and by protecting alternate nest sites. The platform design used was developed by the WDNR, and has proven to be very durable and successful.

During the last several years, the WDNR have erected nest bases. These structures are intended to simulate an eagle nest and to keep eagles nesting in protected locations. The nest bases are used to replace eagle nests which have blown out. Once a nest blows out, the eagles may not build a new nest for several years, or may move to a new location.

The nest base consists of a cone-shaped, heavy-duty wire mesh which is securely attached to one side of a white pine. The cone is approximately two feet high and filled with sticks like a nest. The cone is placed just below the location of the old nest. Eagles then build on this base and tie their nest into the support branches.

Findings:

In 1978-1979 we put a nest base in La-3b, Rolling Stone Lake. The property had just been purchased by Fish Management when the nest blew out and we wanted to keep the eagles at this protected location. The nest base worked and two young were raised in 1979 and again in 1980. The territory had "some degree of activity" in 1981, it was not used in 1982, active but unsuccessful in 1983, inactive in 1984. The platform at BU-14a, Grettum Flowage, maintained a new nest in 1984 which produced one young. The platform at IR-25a, Flambeau Flowage, was inactive in 1984, ON-34 produced 2 young; VI-7 was inactive.

Job 211.5 Nest Visits and Banding of Young

Objective

Monitor migratory movements, population dynamics and other ecological parameters of bald eagles through nest visits and banding of nestlings.

Procedures and Findings

See attached report by Charles Sindelar, "Wisconsin Bald Eagle Breeding Survey - 1984".

Job 211.6 Salvage of Specimens

Objective

Salvage sick, injured or dead birds and addled eggs encountered during banding and other activities.

Procedures and Findings

See attached report by Charles Sindelar, "Wisconsin Bald Eagle Breeding Survey - 1984".

The following table illustrates the cause of bald eagle injuries and mortality in Wisconsin in 1984:

Cause	Injured	Dead
traps	3	
gunshot	1	
flew into wire	1	
fell from nest		1
toxicity		2
dehydration		1
emaciation	1	1
unknown	2	2
Total (15)	8	7

Job 211.7 Winter Inventory

In 1984, approximately 82 people from around the state counted 166 bald eagles. More input from the general public was received than in previous years. This resulted in a larger number and wider distribution of eagle observations.

The following table breaks down the eagle count:

1984 Midwinter Bald Eagle Survey Reporting Form

Number Adult Bald Eagles	115
Number Immature Bald Eagles	51
Number Unknown Bald Eagles	0
Total Bald Eagles Counted	166
Number Adult Golden Eagles	2
Number Immature Golden Eagles	1
Number Unknown Golden Eagles	0
Total Golden Eagles Counted	3
No. counties Surveyed	49
No. 10 min. Blocks Surveyed	0
No. Survey Participants	82

Final 1984 Midwinter Bald Eagle Survey Results
(From the Nation Wildlife Federation)

Region	1984 Total	1983 Total	1982 Total	1981 Total	1980 Total	1979 Total
Wisconsin	166	109	43	88	70	53

Summary

Reproduction continued to be excellent. A 21% increase in occupied territories and a 13% increase in successful territories resulted in a 11% increase in total production of young.

Wisconsin's eagle population is increasing and is well on its way to returning to normal.

Those pairs associated with Lake Superior did very well this year.

Recommendations

Aerial surveys are necessary to assess management efforts, monitor population trends and identify active territories. If possible, the same individual should fly the surveys next year, which would facilitate the location of active nests, alternative nest and old nest sites.

Prepared by C. Sindelar and R. Jurewicz, edited by C. Gieck.

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WISCONSIN BALD EAGLE BREEDING SURVEY - 1984

GENERAL REPORT

Done under contract with the state of Wisconsin
(WI DNR Bureau of Endangered and NonGame Species)

by

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ACKNOWLEDGEMENTS

Many WI DNR personnel helped in varying degrees, but the most notable are Ron Eckstein (Rhinelander), Ray Vallem (Hayward), and Ron Nicotera and Randal Jurewicz of the DNR Bureau of Endangered and NonGame Species (Madison).

U. S. Forest Service Biologists Anthony Rinaldi (Rhinelander) and Howard Sheldon (Park Falls) again funneled nest reports to me, and Howard Sheldon did the April survey on the Chequamegon National Forest.

John W. Winship, U. S. Fish and Wildlife Service Regional Pilot-Biologist, piloted the plane on both of the aerial surveys.

Helen Cummings again furnished us with equipment and lodging and also generously donated the needed money to defray expenses of a much needed field assistant (volunteer).

Many others helped in varying degrees, each in their own way. My sincere thanks to all.

Republic Airlines is again to be thanked and congratulated for their policy regarding shipping eagles air freight -- "Eagles fly free on Republic!"

A big thanks to Dr. Pat Redig for providing his services and facilities in taking care of the eaglets that Wisconsin furnished for "hacking".

WISCONSIN BALD EAGLE BREEDING SURVEY - 1984

INTRODUCTION

The Wisconsin Eagle Survey was again funded jointly by the U. S. Fish & Wildlife Service and the WI DNR. I contracted my services with the State of WI (WI DNR Bureau of Endangered and NonGame Species) to complete the survey.

David L. Evans was hired by the Bureau of Endangered and NonGame Species (WI DNR) for the duration of the "ground checks", and Mary Jane Evans worked as his assistant. Although indispensable in the banding of nestlings, M. J. Evans was not officially hired. She worked on an "expenses only" basis funded wholly through the generous donations of Helen Cummings and administered by the NorthEast WI Audubon Society.

Two strategically timed aerial surveys were again done to locate nests and check for activity and success.

Immediately following the second aerial survey two crews worked simultaneously for roughly a month ground checking primarily successful nests -- banding young, collecting addled eggs, etc.

METHODS

Two aerial nest checks were done with Sindelar as the observer and John W. Winship (U. S. FWS Regional Pilot) manning the controls of the FWS Cessna 337 (Skymaster).

The first check was done on March 12th and 19th, and April 18th, 19th, 20th, 21st, 23rd, 24th, and 29th and May 1st. The second flight was done May 11th, 21st, 22nd, 23rd, 24th, 25th, 26th, and 29th. The first check on the Chequamegon National Forest was done by Forest Service Biologist Howard Sheldon on April 9th.

Although the first check was initiated at approximately the optimum time, unavoidable personal complications and windy conditions followed by a severe snowstorm prevented a timely wrap-up. As result, the very end of the first check was done later than considered optimum.

It is highly likely that at least some of the territories thus "first checked" late and judged to be either "inactive" or were thrown into the S.D. (Some Degree of Activity) category were in fact occupied and then failed prior to the check. This would result in the Occ. Terr. and Failed categories to be somewhat lower and the

inactive and S.D. categories to be somewhat elevated. This would also result in the percentage of nest success to be somewhat elevated.

Seventeen "new territories" were numbered and 37 new nests were located within old numbered territories.

I again made a relatively thorough search of the Apostle Islands and was unable to locate any new nests although all four previously known pairs were at least partially present. All three of the occupied territories on the Apostles (Outer, North Twin and Michigan) incubated and, to our amazement, each hatched two young. Unfortunately the two young on Michigan Island died prior to fledging, but the other four did fledge.

The eagles nesting on Wisconsin's mainland shore of Lake Superior also did well. There were six occupied territories, four of which were successful in producing six young. Thus, the total combined territories with at least S.D. on Lake Superior this year was ten, nine of which were occupied and seven of which hatched a minimum of 13 young and six of which were successful in fledging ten young -- a truly remarkable showing.

There is no doubt that something has changed, but here one can only speculate as to what! Have the old highly contaminated adults been replaced by young, relatively "clean" individuals, or have the contaminant levels in the prey base dropped sufficiently to allow this dramatic increase in reproduction?

Karmin Kozie, a graduate student from the University of Wisconsin, Stevens Point, working under Dr. Raymond Anderson, is presently involved with this very problem. Hopefully her study will supply us with some of the answers.

Again, great effort was put into banding the young. We banded 254 young in Wisconsin -- 91% of the state's total known production.

Twelve addled eggs were collected, at least some of which will by analyzed for chemical contaminants by the U. S. FWS Patuxant Wildlife Research Center, Laurel, Maryland.

YOUNG TAKEN FOR HACKING OUT OF STATE

Wisconsin was again asked to furnish four young for hacking. We complied as follows:

1) On June 6th we took a sickly looking young from a brood of two at ON-49, Horsehead Lake.

2) On June 7th we took the runt from a brood of three at ON-34, Rainbow Flowage
3) One June 7th we took the runt from a brood of three at ON-21b, Tomahawk River.
4) On June 7th we took the runt from a brood of three young at ON-45, Tomahawk River.

Dr. Pat Redig at the University of Minnesota Raptor Rehabilitation Project again agreed to accept, examine, treat as needed, and hold these youngsters until respective hack projects could accept them. Working daily in the field does not lend itself to the caring of these demanding creatures, so being able to ship the eaglets in a timely fashion is a tremendous relief.

These young were again shipped gratis on Republic Airlines. Their policy of "Eagles Fly Free on Republic" was again graciously utilized.

It was gratifying to hear that there now is a breeding pair of eagles very near the hack project at "Land-Between-the Lakes" in extreme southwest Kentucky. At least one of the breeding adults is the product of a previous "hack". Although Wisconsin did furnish this project with birds in 1980, it has been reported that the marked individual is not a Wisconsin bird.

A second pair is now also breeding at Cross Creeks National Wildlife Refuge in extreme northwest Tennessee (also in the same area). Although it seems likely, it has not been determined if either adult at that site is marked.

BANDED BREEDING ADULTS

While the climber is so occupied, the ground crew routinely allots some time to the task of trying to determine if the adults are banded. Many locations simply don't lend themselves to this end (dense forest canopy). At some sites one or both adults stay at a distance too great to make the determination. At other sites the adults do not show up at all while we are in the area, but whenever possible we attempt to "see bands".

We now have identified a number of our breeding adults as banded individuals. Considering the percentage of the state's production that is banded each year, it stands to reason that good numbers of these banded birds would be entering the breeding population when they become of age.

Incidental to an otherwise quite routine climb at ON-47, McCormick Lake (a tree he had climbed many times before), Eckstein experienced an unusual "high". June 8th was unusually windy. In fact, so much so as to make climbing seem dangerous to the insecure. Trees could be heard crashing to the ground throughout the day. The noise of the wind apparently successfully muffled all unnatural human sounds. Not only did the adult on the nest not hear our approach, she did not hear or feel Eckstein climbing the tree. As his head reached the nest level, much to his surprise, he saw an adult eagle feeding two young. To avoid detection he immediately crouched and got into as secure a position as is possible, some 90 odd feet above the ground, rocking to and fro in a tremendous wind. Upon getting mentally prepared, he raised up and made a tremendous lunge and was able to grab the adult. Luckily she made no attempt to attack, merely tried to escape, giving Eckstein the opportunity to obtain nearly complete control of the situation. He immediately noticed the bird was banded and, yes, it was our band -- a band we had affixed on a youngster in its natal nest a mere 14½ air miles distant (ON-25, WI River) on June 8, 1974, ten years ago to the day!

During the past two decades that I've been involved with banding WI eagles, this situation has presented itself a mere handful of times, but only once before did it culminate in a successful capture. On June 18, 1972 at VI-35, Trout River, Dave Evans similarly caught an adult on her nest. She, however, was not banded. What a way to obtain a high!

SICK, INJURED, AND DEAD EAGLES

SICK

One sick individual was encountered (still in the grey downy stage) at ON-49, Horsehead Lake, on 6-6-84. Both ears were litterly stuffed with live fly maggots and oozing with exudate. Dr. Pat Redig removed the maggots and following treatment determined that the bird was in excellent health and suffered no ill effects. Thus, this youngster became one of the four that Wisconsin supplied for hack projects. It's nest mate showed no similar problem.

Two sick young were noted at BU-5, Buffalo/Yellow on 6-1. Both had "cold" type breathing problems. Both were left as found.

INJURED

One of two youngsters prematurely jumped from an Iron County nest (IR-30, Flambeau Flowage, Big Is. E.) on 6-15 during routine banding operations. If primary wing feathers had been further advanced, the premature jumper merely would have flapped and glided uninjured to the ground. However, this bird's feathers were not nearly sufficiently advanced to account for its unexplainable jump. It fell neraly straight down and landed on it's back, suffering a spinal injury. We shipped the youngster to Dr. Pat Redig at the University of Minnesota where it died.

We have now banded over 2000 young eagles in Wisconsin. We have recorded only one previous incident of such a premature jump (suicide attempt).

DEAD

Dead young found while banding:

6-11-84: VI-34c, Kentuck L., one dead yg; 2½' primary wing feathers, probably dead 24 hours; nest mate seemed fine.

5-26-84: DU-2c, Amnicon River, one ten-day old young, had been dead ± 24 hours (collected and frozen); second dead young, feathers only; third young appeared fine.

6-1-84: BU-8b, Amsterdam Slough; remains of one dead young; two nestmates seemed fine.

6-6-84: WA-17, Nemakagon River; the only yg found dead on the ground, 20 feet from base of nest tree; had been dead a "long time".

6-11-84: DU-1, Ox Creek; feathers only of dead yg.

6-18-84: BY-19, Sand River; remains of (feathers only) a flying age eagle on ground at base of tree (not a young).

YOUNG THAT DIED AFTER BANDING

Both young banded 6-1 at VI-27, Kego L., died in early July prior to fledging (cause unknown).

Both young banded at AS-20, Michigan Island (Apostles) died in early July before fledging (cause unknown).

SUMMARY

Reproduction continued to be excellent. A 21% increase in occupied territories and a 13% increase in successful territories resulted in a 11% increase in total production of young.

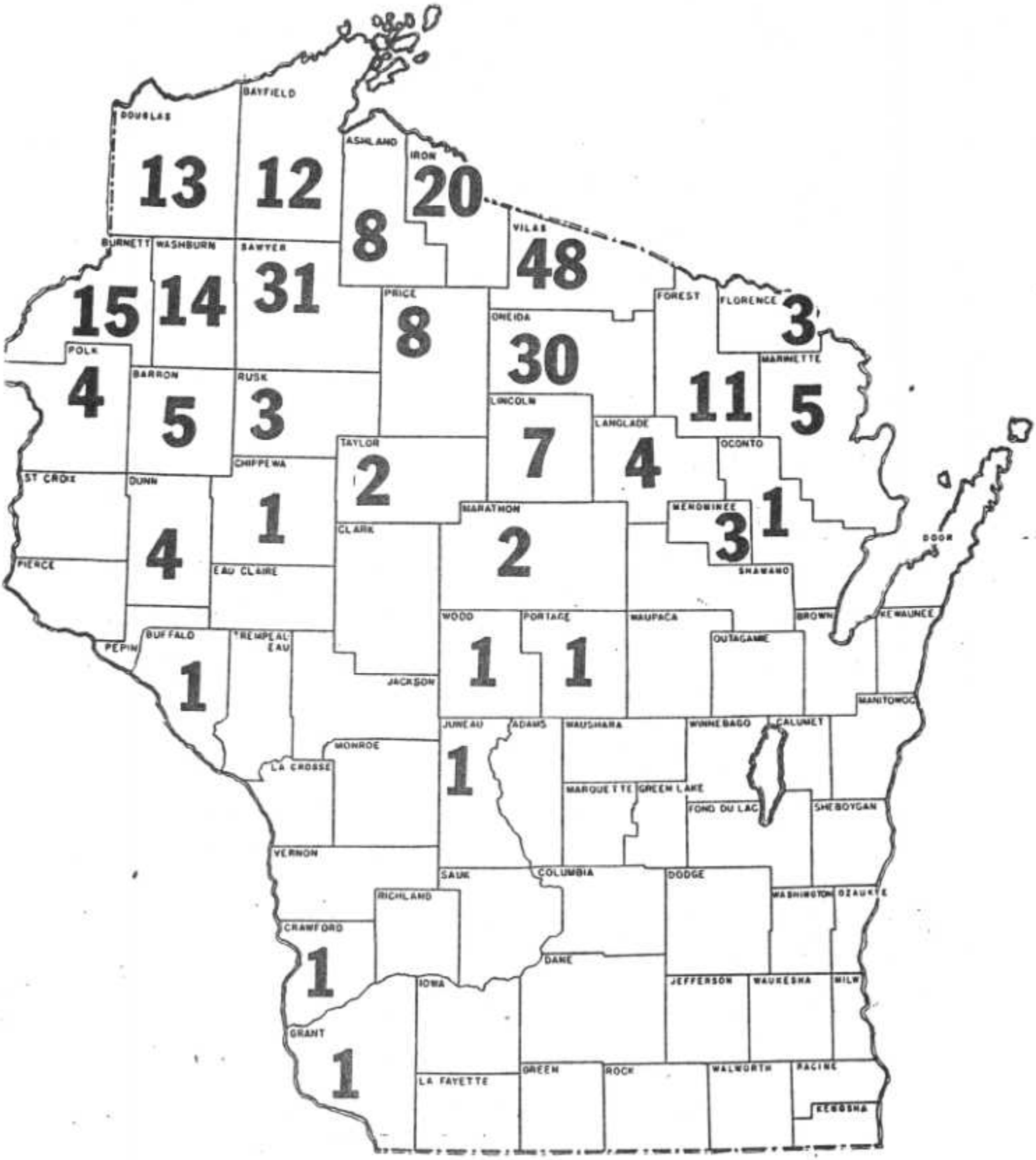
Wisconsin's eagle population is increasing and is well on its way to returning to normal. Hopefully with our help this trend will continue.

WISCONSIN BALD EAGLE BREEDING SURVEY - 1984

Breakdown by County and State Totals

County	Terr. w/@ least S.D. of activity	Occ. Terr. w/ Known Outcome	Succ. Terr.	# of Yg. Produced
Ashland	8	8	5	10
Barron	5	5	2	3
Bayfield	12	12	8	12
Buffalo	1	1	1	2
Burnett	15	15	11	19
Chippewa	1	1	1	1
Crawford	1	1	1	2
Douglas	13	13	12	20
Door	0	0	0	0
Dunn	4	4	3	5
Florence	3	1	1	1
Forest	11	10	8	11.6*
Grant	1	1	1	2
Iron	20	20	11	19
Jackson	0	0	0	0
Juneau	1	0	0	0
Langlade	4	4	3	4
Lincoln	7	5	5	8
Marathon	2	2	0	0
Marinette	5	5	4	8
Menominee	3	3	1	2
Oconto	1	1	1	2
Oneida	30	23	20	36
Polk	4	4	3	7
Portage	1	1	0	0
Price	8	8	5	6
Rusk	3	3	2	3
Sawyer	31	31	20	30.6 *
St. Croix	0	0	0	0
Taylor	2	2	0	0
Vilas	48	40	28	44
Washburn	14	14	11	17.6 *
Wood	1	1	1	3
33 TOTALS	260	239	169	278.8 #

*Includes one productive territory containing an estimated 1.6 yg.
#Includes three productive territories containing an estimated 1.6 yg each.



WISCONSIN BALD EAGLE TERRITORIES SHOWING AT LEAST SOME DEGREE OF ACTIVITY IN 1984

WISCONSIN BALD EAGLE REPRODUCTIVE COMPARISON

(1973-1984)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Terr. w/@ least S.D. of activity					154	166	172	196	202	234	235	260
Occ. terr.	108	107	111	149	151	140	151	175	188	207	198*	239
Succ. terr.											149	169¶
% nest succ.	61%	55%	62%	61%	72%	70%	70%	75%	73%	70%	76%	70%
Ave. # yg/occ. terr.	.94	.94	1.0	.95	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.2
Ave. # yg/succ. terr.	1.6	1.7	1.6	1.6	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.6
Total # yg produced	107	101	112	139	181	168	179	231	227	251	252	278.8

*Includes 1 occ. terr. with unknown outcome.
¶Includes 3 succ. terr. estimated to each contain 1.6 yg.

WISCONSIN BALD EAGLE BREEDING SURVEY - 1984

Statewide

71% nest success
1.2 yg/occ. terr.
1.6 yg/succ. terr.

	Successful Territories			
	1 yg.	1.6 yg	2 yg	3 yg
NorthCentral Dist.	29 (45%)	1 (1%)	29 (45%)	6 (9%)
NorthWest Dist.	34 (38%)	2 (2%)	52 (58%)	2 (2%)
Lake Michigan Dist.	1 (14%)	0 (0%)	6 (86%)	0 (0%)
WestCentral Dist.	2 (33%)	0 (0%)	4 (66.7%)	Q (0%)
Southern Dist.	0 (0%)	0 (0%)	1 (100%)	0 (0%)
STATE TOTAL	66 (39%)	3 (2%)	92 (54%)	8 (5%)